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Neocolonial conservation: is moving rhinos to Australia conservation or genetic theft?

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23

24 **Abstract**

25 The Australian Rhino Project (www.theaustralianrhinoproject.org) proposes importing 80 rhinos
26 from South Africa to Australia by 2019 at a cost of over \$US4 million, and the first six due to have
27 been moved in 2016. This project has high profile supporters in the private sector, zoos and both
28 governments, and is gaining major publicity through association with sporting teams and TedEx talks
29 ([http://www.theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/242-ray-](http://www.theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/242-ray-tedx)
30 [tedx](http://www.theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/242-ray-tedx)). However, establishing extralimital populations of African rhinos is a very low priority
31 conservation action, particularly given over 800 are already in captivity, and we argue this project
32 diverts funds and expertise away from more important activities; the proposed captive conditions
33 will lead to selection for domestic traits; the most likely species involved is the white rhino, which is
34 the lowest priority rhino species for conservation; it removes a driver of *in situ* conservation; it does
35 not focus on the critically endangered Asian rhino species; and it extends the historical exploitation
36 of Africa's resources by colonial powers. There are also insufficient details in the public domain
37 about the project for objective decision-making. We believe this is misdirected neo-colonial
38 conservation and the policy support from both governments for this project should be reconsidered.

39

40 **Main body text**

41 The Australian Rhino Project (www.theaustralianrhinoproject.org) plans to move 80 rhinos
42 from South Africa to Australia between now and 2019 (Agence France-Presse 2016) in an effort to
43 combat the impacts of the poaching epidemic that is afflicting Africa (Ferreira et al. 2015; Graham-
44 Rowe 2011). The current cost of this action is estimated at \$AUD70,000 per rhino, which equates to
45 A\$5,600,000 (\$US4,200,000; or ZAR61,670,000 based on the exchange rate @21/06/2016), and it is
46 unclear whether this sum accounts for the costs of returning these animals and their progeny to

South Africa when the poaching epidemic ends (Hayward et al. 2016). The project is partnered or supported by major corporations (Investec, Coca Cola-Amatil, Carlton & United Breweries, The Classic Safari Company *inter alia*), sporting teams (Waratahs rugby), conservation management organisations (Taronga Conservation Society, Zoos South Australia, Australian Zoo and Aquarium Association), and esteemed academic institutions (University of Sydney). The project is also reported as having the support of both the Australian and South African governments (<http://theaustralianrhinoproject.org/index.php/news/blogs/11-news-and-blogs/231-australian-rhino-project-moving-rhinoceros-from-africa-to-protect-against-poaching>) and celebrities (Dumas 2016). A feasibility study has reportedly been conducted, but is not available on the website or upon request due to commercial-in-confidence restrictions (R. Dearlove, *pers. comm.*; 26/05/2016), nor are the terms of reference for such a study provided. Below, we document some concerns we see with the policies of both the Australian and South African governments that reportedly support this initiative, and identify major questions that need answering.

Firstly, even though private donations for one project are not necessarily fungible, the financing of this project is likely to have competed, and will continue to compete, for funds for higher priority *in situ* rhino conservation actions. While the creation of extralimital populations is listed as a conservation action for Africa's rhinos, it is a low priority (Magome et al. 2014) because there were 706 southern white rhinos (298 males, 405 females and 3 young) in captivity in zoos at the end of 2011, according to the white rhino studbook, plus an additional 141 that have been imported to China since 2000 that are not included in the studbook (Ogden 2011). An unknown, but large, number are held by private owners in South Africa. With appropriate management, this captive population is sufficient in number to ensure white rhinos persist without losing genetic diversity. The amount of money needed to bring 80 white rhinos to Australia equates to almost double the annual anti-poaching budget used by SANParks (\$US2.2 million; SANParks 2015). Were the donors provided with appropriate information, at least some might have been persuaded to fund higher priority actions, such as supplementing on-ground actions or developing new actions in

South Africa (Mulero-Pázmány et al. 2014). In this sense, the Australian Rhino Project is directly comparable to the *ex situ* (i.e. foreign zoos) captive breeding initiative for the Sumatran rhino *Dicerorhinus sumatrensis* in the 1980s. As Caughley (1994) pointed out, this removal of a large number of Sumatran rhino from the wild failed to boost the population, and carried the missed opportunity costs of failing to conserve rhino habitat with its myriad of other biodiversity benefits. Alternatively, these funds could go towards reinforcing education programs in Asia to reduce the demand for rhino horn (Challender and MacMillan 2014; Challender et al. 2014). However, if this largely Australian-sourced money were to be dedicated to conservation actions within Australia, the money would be better served targeting Australia's 108 threatened mammal species, given Australia's appalling record in mammal extinctions (Woinarski et al. 2014), including two in the past five years (Woinarski et al. 2016).

Secondly, there are two species of rhinos in Africa – *Ceratotherium simum* and *Diceros bicornis* (white and black respectively) – but no mention is made by the Australian Rhino Project as to which is being targeted or whether both are. The availability of white rhinos in private hands in South Africa suggests these will be the focus of the Australian Rhino Project. Notwithstanding the various subspecies that are currently managed as evolutionarily significant units (Amin et al. 2006), a breeding population of 40 or even 80 individuals is likely to be below the effective population size necessary to conserve genetic diversity (Frankham 1995), although we recognise that genetic diversity may not be lost over the short term. Rhino translocation has developed into a highly successful operation with minimal mortalities (Linklater et al. 2011; Linklater and Swaisgood 2008) in comparison to past attempts (Kelly et al. 1995) and so moving the animals to Australia is likely to be successful. However, captive breeding introduces a range of selective pressures that favour the domestication of animals that may be detrimental if they are ever returned to the wild (Araki et al. 2007; Lynch and O'Hely 2001; Snyder et al. 1996). This is still likely to occur even in open range zoos, like Monarto or Western Plains (that are currently proposed as captive sites for the Australian Rhino Project), particularly given the important role predation has played in rhino evolution (Berger 1995;

Berger and Cunningham 1994). There are also likely to be new stressors introduced into captive animals driven by unnatural stocking densities. White rhinos in the wild live at densities of between 0.5 and 5.6 individuals km⁻² (Owen-Smith 1981; Pienaar 1994; Shrader et al. 2006), which means that an area of up to 160 km² will be required to house the 80 animals transported to Australia in something resembling wild conditions. This seems unlikely given that Western Plains Zoo in its entirety is currently 3 km² and Monarto is 15 km² (Zoos SA *pers. comm.*).

Thirdly, Africa's rhinos are not necessarily the highest priority pachyderms for conservation actions (Ripple et al. 2015). White rhinos (global population estimate: 20,170) and black rhinos (4880) (Emslie 2012a, b), are more abundant and probably more secure than the Great Indian *Rhinoceros unicornis* (2575), Sumatran (275) and Javan *Rhinoceros sondaicus* (60) that are all listed as Critically Endangered (Ripple et al. 2016; Ripple et al. 2015; Talukdar et al. 2008; van Strien et al. 2008a, b). Given that these last three species combined are less common than Africa's rarest rhino, they must be seen as a higher conservation priority for *ex situ* conservation (Isaac et al. 2007). The latest population estimates for black rhino suggest a significant increase since 2012, while those for white rhino show no significant change since 2012 (AfRSG 2016) reinforcing the fact that these are the lowest priority rhino species. While making a decision to implement conservation actions are likely to be more effective when populations are large (Martin et al. 2012; McDonald-Madden et al. 2011), there already exists a viable captive population for white rhinos and the other rhino species are in much greater need of conservation action than white rhinos.

Fourthly, *in situ* conservation has multiple benefits beyond single species. As megaherbivores, rhinos are keystone species that play many key ecological roles (Fritz et al. 2002; Kerley and Landman 2006; Ripple et al. 2015) including holding together complex multi-trophic interspecific relationships (Plotz 2014) and the creation of grazing lawns for other species that has cascading impacts on ecosystem structure and leading to an alteration of fire regimes (Cromsigt and te Beest 2014; Waldram et al. 2008). Rhinos also inhabit sites occupied by a suite of other

threatened fauna. The presence of rhinos ensures the protection of areas where other threatened species, such as elephants *Loxodonta africana*, lions *Panthera leo*, African wild dogs *Lycaon pictus* and pangolins *Smutsia temminckii*, persist. Furthermore, rhinos have a suite of commensal and parasitic organisms living on and in them (Zumpt 1964) and so the translocation process is likely to lead to them being removed (Stringer and Linklater 2014) and thereby placing these species under greater risk of extinction than the rhinos themselves (i.e. the relationship between rhino density and parasite abundance suggests the Australian Rhino Project places rhino conservation above their host-specific microbiota; Stringer and Linklater 2015). Moreover, early parasite exposure is central to the development of a host organism's fully functioning immune system (Spencer and Zuk 2016), and this limited exposure to parasites in captivity will reduce the survivability of any offspring that may ultimately be returned to the wild.

Fifthly, the people involved in the Australian Rhino Project are experienced business leaders, marketing specialists and scientists with considerable international involvement with major funding agencies. Their talent and experience is being diverted away from raising money and the profile of other species of higher conservation priority than Africa's rhinos.

Finally, and most importantly, the proposal extends the history of exploitation of Africa's resources. Taking biodiversity assets, like rhinos, for 'safe-keeping' in the west is as patronising and disempowering as the historical appropriation of cultural artefacts by colonising nations (Nicholas and Wylie 2009). Such artefacts are currently being returned worldwide now that local institutions are strengthened. The same approach should be taken for biodiversity, via institutional strengthening, improved governance and improved protection of existing biodiversity assets in country. Indeed the genetic resources embodied in charismatic rhinos should be as protected under the Convention on Biological Diversity as those producing commercial products.

Notwithstanding the above points, we acknowledge that there are potential benefits from this project. Individual rhinos may be safer in Australia, although illegal wildlife capture and trade

does occur there (Alacs and Georges 2008). Their removal from South Africa and transport to Australia may serve to raise awareness in both countries, and globally, of the plight of rhinos and possibly even the importance of prioritising conservation actions (Carwardine et al. 2012).

Yet there remain important unanswered questions. If these translocated animals breed successfully, they will need to be repatriated to South Africa. Where will those funds come from? Does South Africa – whose natural heritage is being sent to Australia – retain ownership rights to the founder stock and their progeny? This may have been the plan in the 1992 importation of black rhinos to Australia from Zimbabwe, but neither the survivors of that operation or their progeny have been returned (Kelly et al. 1995). In this respect, the giant panda *Ailuropoda melanoleuca*, all of which remain the property of China even when made available to 122 foreign zoos, provides an interesting model of how the rights to a species can be retained by the source nation. The loan agreements for panda include an annual payment (approx. US\$1 million), retention of progeny and have limited duration. Is the Australian Rhino Project and/or the South African government considering such an arrangement, and if not, why not? Which species of African rhino will be transported to Australia? The conservation status of white rhinos means a captive population of these offers little conservation benefit, although it seems most likely to be the focus. This information is not available on the project website (@20th of October, 2016) or upon request from the Founder.

Conservation projects are ultimately more legitimate, politically acceptable and successful when led locally (Rodríguez et al. 2007; Smith et al. 2009). The Black Rhino Range Expansion Project (BRREP), for example, is a partnership between the World Wildlife Fund- South Africa, provincial conservation agencies (Ezemvelo KwaZulu-Natal Wildlife and Eastern Cape Parks and Tourism Board) and private landowners, aiming to increase the overall range and growth rate of South Africa's black rhino population (Sherriffs 2006; Sherriffs 2007; Sherriffs 2010). Since 2004, more than 70 calves have been born from the relocation of 160 black rhinos to create 10 new rhino populations spanning

220,000 hectares (11th translocation is planned for 2017) (WWF-South Africa Undated). After a decade, the BRREP now manages an estimated 6% of the total black rhino population in state, provincial and private owned lands in South Africa, supporting a 21% growth rate in KwaZulu-Natal's overall black rhino population alone - the highest level since counting began (WWF-BRREP Bulletin 2009). While the donor conservation agency retains ownership of founder rhinos, private custodians share equally the benefits of rhinos born in these populations (Knight et al. 2010). Other benefits include the facilitation of partnerships among private landowners to remove internal fences to expand the area of suitable land before rhinos are relocated, while also providing financial and logistical support to help with fencing, monitoring (telemetry) and anti-poaching measures (e.g. light aircraft)(Sherriffs 2006; Sherriffs 2007; Sherriffs 2010). This has increased opportunities for local socio-economic development and biodiversity protection as almost 50% of the land area is community owned/managed (Sherriffs 2006; Sherriffs 2007; Sherriffs 2010). These large protected land areas have also supported the range expansion of other threatened species (e.g., elephant; Slater and Knights 2011).

Although the establishment of new rhino populations is a low conservation priority, efforts to create a viable rhino breeding herd in Botswana are underway. Botswana has one of the lowest poaching rates in Africa, and Rhinos Without Borders (RWB, <http://www.rhinoswithoutborders.com/>) is a partnership between conservation and eco-tourism agencies in Botswana to relocate 100 white rhino from South Africa, where, with Kenya and Zimbabwe, account for nearly 95% of rhino poaching since 2006 (Howard 2015; Milliken and Shaw 2012). Supported by bilateral agreements (between countries), crowd funding and ongoing monitoring (telemetry) and protection, RWB has already successfully moved 26 white rhinos to wildlife concessions and national parks throughout Botswana. RWB, including ongoing monitoring and security, requires less money than proposed by the Australian Rhino Project (\$45, 000 per rhino and a total budget of US\$4.5 million). Although relocations of rhino are crowdfunded, ongoing eco-tourism opportunities help sustain the

monitoring and protection of rhino while supporting jobs, income and ongoing biodiversity protection in local communities. Other community-based ecotourism initiatives for rhino conservation in north-west Namibia have catalysed improved species protection and a large-scale rhinoceros population recovery, where a strong social foundation allowed for more effective protection strategies (i.e., law enforcement; Muntifering et al. 2015). Thus, community based conservation has a significant role to play in rhino protection and population recovery (Berkes 2007; Muntifering et al. 2015) and there are clearly still relatively safe areas within range states that can accommodate new rhino populations, further reducing the need to establish more captive populations on other continents.

In summary, we see this project as i) diverting funds and public interest away from the real actions necessary to conserve rhinos, and, as currently construed, appears *prima facie* as an example of (ii) *neocolonial conservation* that distracts public interest away from the real actions necessary to conserve rhinos. The Australian Rhino Project does nothing to solve the poaching crisis and the real issue of dampening demand for rhino horn. As such, the translocated rhino and their offspring will likely remain as zoo animals in Australia, as the poaching crisis is likely to continue. The project, while well-meaning, potentially takes funds, attention and skills away from where it is needed, while disempowering local organisations. Far better would be identifying 'safe' *in situ* areas to relocate sufficient numbers of rhinos from large source populations (McDonald-Madden et al. 2011) to establish breeding populations within Africa, as is occurring with translocations of rhinos to Botswana and even within South Africa (e.g., under the BRREP and RWB initiatives; Howard 2015; Knight et al. 2010; Knight et al. 2015; Sherriffs 2010), and then adequately funding their protection. The RWB provides an holistic model to establish extralimital populations in 'safer' countries, such as Botswana, but even this is a very low priority for rhino management in South Africa (Magome et al. 2014). For rhinos generally a more appropriate focus for establishing extralimital populations would be the more highly threatened Asian rhinos – but there are few suitably forested, free range enclosures of sufficient size to enable captive breeding in semi-wild conditions of these species in

Australia. Those donating money to this project would be better off investing in strengthening education policies in Asia to reduce consumer demand for rhino horn (Johnson 2015) or supporting incentives for locally led initiatives so that communities are supported to act as a more effective first line of defence against poaching (Biggs et al. 2016; Muntifering et al. 2015; Smith et al. 2009). Rather than reinforcing colonial stereotypes by removing assets to the west for safekeeping, investors would sustain not just rhinos but all species sharing their environment by strengthening local conservation institutions and capacity. After all it was local institutions and capacity at the centre of one of the world's greatest conservation success stories, bringing white rhino back from the brink of extinction (i.e., Operation Rhino from c.100 individuals to over 20,000 today; Emslie 2011; Rochat and Steele 1968). The policies of the IUCN Species Survival Commission Rhino Specialist Group, and the South African and Australian governments need clarification to ensure this project a) is refocused to deliver real conservation benefits for taxa that are most in need; and b) is not used as justification for this type of activity becoming a regular conservation intervention. Africa has a strong track record in rhino conservation and is using within-Africa translocations to strengthen international relations in a politically neutral fashion (Kerley and Knight 2009).

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